

Abstract

[0024] A method to condition honey bees to search for a non-reward producing target odor source is described. The method can be used to enable bees to identify a number of chemical substances such as those associated with unexploded ordinances, land mines, and illicit drug laboratories. Further, the subject method can be used to increase pollination efficiency by conditioning the bees to search for a specific vapor from a target crop. The method includes conditioning the bees to the target odor by moving their hives into a staging area. The staging area is located at least two miles from the ultimate site to be searched. The target odor is applied to the hives. Bulk feeders containing the target odor are placed near the hives. The hives are reoriented to the bulk feeders for several days. The hives are then moved to the search site and feeding/conditioning means containing the target odor are placed nearby. For the first, approximately 24 hours, the bees are fed from the feeding/conditioning means. Thereafter, periods of feeding and starvation are alternated to encourage the bees to forage and identify the target source. Several embodiments of the feeding/conditioning means which present the target odor to the bee during conditioning are described. Additionally, an automated feeding controller delivery means useful in the conditioning method is described.